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**IN THE CLAIMS:**

*cancel*

Please replace claims 1-46 with the following claims:

- M/N  
5/21/04  
Rule 1.126 47*
- A method of remotely testing emissions of a vehicle, comprising:
- (a) wirelessly receiving, by a computer system and from a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
  - (b) analyzing the received data to determine a status of the vehicle's emissions;
  - (c) repeating the wirelessly receiving and analyzing while the vehicle is in use;
  - (d) outputting information indicative of the determined status of the vehicle's emissions;
  - (e) storing at least a portion of the received data in a database;
  - (f) wirelessly receiving GPS data from the vehicle; and
  - (g) providing at least one webpage with access to emissions testing software,

wherein the vehicle is at a location remote from an emissions testing entity,

wherein the repeating includes determining whether the vehicle's emissions are compliant with at least one predetermined emissions criterion,

wherein the repeating includes monitoring the data relating to the at least one I/M readiness flag, wherein the monitoring is authorized by a user,

wherein outputting information includes sending an electronic text, data, or voice message to a computer, cellular telephone, or wireless device,

wherein outputting information includes displaying information on at least one webpage;

wherein outputting information includes notifying an entity when the vehicle's emissions are not compliant with at least one test criterion,

wherein outputting information includes providing information concerning the vehicle's emissions to at least one entity, wherein the at least one entity comprises a governmental or nongovernmental organization or a user, and

wherein analyzing the received data includes:

- (i) determining if one or more DTCs are present among the received data;
- (ii) determining the status of the MIL; and
- (iii) determining a status of the at least one I/M readiness flag.

*48*  
A method of remotely testing emissions of a vehicle, comprising:  
(a) wirelessly receiving, by a computer system and from a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;

- (b) analyzing the received data to determine a status of the vehicle's emissions;
- (c) repeating the wirelessly receiving and analyzing while the vehicle is in use; and
- (d) outputting information indicative of the determined status of the vehicle's emissions.

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3. The method of claim 2, wherein the vehicle is at a location remote from an emissions testing entity.

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4. The method of claim 2, wherein the repeating includes determining whether the vehicle's emissions are compliant with at least one predetermined emissions criterion.

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5. The method of claim 4, wherein the outputted information indicates that the vehicle's emissions are not compliant with the at least one predetermined emissions criterion.

52

51

6. The method of claim 4, wherein the outputted information indicates that the vehicle's emissions are compliant with the at least one predetermined emissions criterion.

53. <sup>48</sup> The method of claim 2, wherein the repeating includes monitoring the data relating to the at least one I/M readiness flag.

54. <sup>53</sup> The method of claim 11, wherein the monitoring is authorized by a user.

55. <sup>53</sup> The method of claim 11, wherein the outputted information indicates a status of the at least one I/M readiness flag.

56. <sup>48</sup> The method of claim 2, wherein the outputted information indicates a description of the at least one DTC.

57. <sup>48</sup> The method of claim 2, further comprising storing at least a portion of the received data in a database.

58. <sup>48</sup> The method of claim 2, wherein the repeating is stopped when a predetermined set of readiness flags are characterized by a complete condition.

59. <sup>48</sup> The method of claim 2, wherein analyzing the received data includes:

- (i) determining if one or more DTCs are present among the received data;
- (ii) determining the status of the MIL; and
- (iii) determining a status of the at least one I/M readiness flag.

*60*  
14. The method of claim *13*, wherein analyzing the received data further includes determining whether a user passes or does not pass an emissions test.

*61*  
15. The method of claim *14*, wherein the data relating to the at least one I/M readiness flag describes a status of the flag.

*62*  
16. The method of claim *15*, wherein analyzing the received data further includes determining if the at least one I/M readiness flag is characterized by at least one of a complete condition, an incomplete condition, a not available condition, and a not supported condition.

*63*  
17. The method of claim *16*, wherein the vehicle is determined to not pass an emissions test if more than two I/M readiness flags are characterized by an incomplete condition.

64 18. The method of claim 13, wherein the vehicle is determined to not pass an emissions test if at least one DTC is present among the received data.

65 19. The method of claim 13, wherein the vehicle is determined to not pass an emissions test if the MIL status is characterized by an on condition.

66 20. The method of claim 13, wherein the vehicle is determined to pass an emissions test if no DTCs are present among the received data.

67 21. The method of claim 13, wherein the vehicle is determined to pass an emissions test if the MIL status is characterized by an off condition and a predetermined set of supported I/M readiness flags are characterized by a complete condition.

68 22. The method of claim 13, wherein the vehicle is determined to not pass an emissions test if the MIL status is characterized by an off condition and a predetermined set of supported I/M readiness flags are characterized by an incomplete condition.

69 59  
23. The method of claim 13, wherein the vehicle is determined to pass an emissions test if the MIL status is characterized by an off condition and no more than two of a predetermined set of supported I/M readiness flags are characterized by an incomplete condition.

70 59  
24. The method of claim 13, wherein the vehicle is determined to pass an emissions test if the MIL status is characterized by an off condition, the vehicle has no DTCs, and all supported I/M readiness flags are characterized by a complete condition.

71 48  
25. The method of claim 2, further comprising storing at least a portion of results from the analyzing in a database.

72 48  
26. The method of claim 2, wherein outputting information includes sending an electronic text, data, or voice message to a computer, cellular telephone, or wireless device.

73 48  
27. The method of claim 2, wherein outputting information includes displaying information on at least one webpage.

74 73  
28. The method of claim 27, wherein the displayed information includes one of at least a portion of the received data and results of the analyzing.

- 75 48  
29. The method of claim 2, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle.
- 76 48  
30. The method of claim 2, wherein the repeating is performed continuously.
- 77 76  
31. The method of claim 30, wherein outputting information includes notifying an entity when the vehicle's emissions are not compliant with at least one test criterion.
- 78 48  
32. The method of claim 2, further comprising wirelessly transmitting a schema configured to adjust a transmission frequency in the vehicle.
- 79 48  
33. The method of claim 2, further comprising providing at least one webpage with access to emissions testing software.
- 80 48  
34. The method of claim 2, wherein outputting information includes providing information concerning the vehicle's emissions to at least one entity.

*81* *35.* The method of claim *34*, wherein the at least one entity comprises a governmental or nongovernmental organization or a user.

*82* *36.* The method of claim *35*, wherein the organization is a certification organization.

*83* *37.* The method of claim *2*, wherein the wirelessly receiving is performed when authorized by a user of the vehicle or a third party.

*84* *38.* The method of claim *2*, wherein the wirelessly receiving is performed when a data parameter of the vehicle exceeds a predetermined value.

*85* *39.* The method of claim *38*, further comprising wirelessly receiving GPS data from the vehicle.

*86* *40.* The method of claim *2*, further comprising sending at least a portion of the received data to an entity for analysis.

*87* *41.* A method of remotely testing a vehicle's emissions, comprising:

(a) generating, in a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;

(b) transferring the data to a wireless appliance comprising,

(i) a microprocessor, and

(ii) a wireless transmitter interfaced with the microprocessor;

(c) wirelessly transmitting the data with the wireless transmitter; and

(d) repeating the generating, transferring, and transmitting while the vehicle is in use,

wherein the generating further includes generating a status of at least one of the following I/M readiness tests: (i) misfire monitoring; (ii) fuel systems monitoring; (iii) comprehensive component monitoring; (iv) catalyst monitoring; (v) evaporative system monitoring; (vi) oxygen sensor monitoring; (vii) oxygen sensor heater monitoring; and (viii) exhaust gas recirculator system monitoring,

wherein the generating further includes generating a status of each of tests (i) through (viii) that are supported by the vehicle,

wherein the generating further includes monitoring an engine computer in the vehicle to generate the data comprising at least one of (i) at least one vehicle DTC, (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag, and

wherein the data is transferred to the wireless appliance until the wireless appliance receives at least one instruction to stop the transferring.

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42.

A method of remotely testing a vehicle's emissions, comprising:

- (a) generating, in a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) transferring the data to a wireless appliance comprising:
  - (i) a microprocessor, and
  - (ii) a wireless transmitter interfaced with the microprocessor;
- (c) wirelessly transmitting the data with the wireless transmitter; and
- (d) repeating the generating, transferring, and transmitting while the vehicle is in use.

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43.

The method of claim 42, wherein the generating further includes generating a status of at least one of the following I/M readiness tests: (i) misfire monitoring; (ii) fuel systems monitoring; (iii) comprehensive component monitoring; (iv) catalyst monitoring; (v) evaporative system monitoring; (vi) oxygen sensor monitoring; (vii) oxygen sensor heater monitoring; and (viii) exhaust gas recirculator system monitoring.

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44.

The method of claim 89, wherein the generating further includes generating a status of each of tests (i) through (viii) that are supported by the vehicle.

*91* *88*  
45. The method of claim *42*, wherein the generating further includes monitoring an engine computer in the vehicle to generate the data comprising at least one of (i) at least one vehicle DTC, (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag.

*92* *91*  
46. The method of claim *45*, wherein the engine computer is monitored with a period of 24 hours or less.

*93* *91*  
47. The method of claim *45*, wherein the monitoring ceases when the data relating to the I/M readiness flags indicates that no more than two flags supported in the vehicle are characterized by an incomplete condition.

*94* *93*  
48. The method of claim *47*, wherein the monitoring ceases when the data relating to the I/M readiness flags indicates that each flag supported in the vehicle is characterized by a complete condition.

*95* *98*  
49. The method of claim *42*, wherein the transferring further includes serially transferring the generated data through an OBD-II connector in the vehicle to the wireless appliance.

*96*      *83*  
50. The method of claim *42*, wherein the data is transferred to the wireless appliance until the wireless appliance receives at least one instruction to stop the transferring.

*97*      *88*  
51. The method of claim *42*, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle.

*98*      *88*  
52. The method of claim *42*, wherein at least one of the generating and transmitting is performed at a configurable, predetermined, or random interval.

*99*      *98*  
53. The method of claim *52*, wherein the interval is a time or mileage interval.

*100*      *98*  
54. The method of claim *52*, further comprising wirelessly downloading a schema configured to change the interval.

*101*      *55*. A programmed apparatus, programmed to execute a method of remotely testing emissions of a vehicle, comprising:

- (a) wirelessly receiving, by a computer system and from a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) analyzing the received data to determine a status of the vehicle's emissions;
- (c) repeating the wirelessly receiving and analyzing while the vehicle is in use;
- (d) outputting information indicative of the determined status of the vehicle's emissions;
- (e) storing at least a portion of the received data in a database;
- (f) wirelessly receiving GPS data from the vehicle; and
- (g) providing at least one webpage with access to emissions testing software,  
wherein the vehicle is at a location remote from an emissions testing entity,  
wherein the repeating includes determining whether the vehicle's emissions are  
compliant with at least one predetermined emissions criterion,  
wherein the repeating includes monitoring the data relating to the at least one I/M  
readiness flag, wherein the monitoring is authorized by a user,  
wherein outputting information includes sending an electronic text, data, or voice  
message to a computer, cellular telephone, or wireless device,  
wherein outputting information includes displaying information on at least one webpage,

wherein outputting information includes notifying an entity when the vehicle's emissions are not compliant with at least one test criterion,

wherein outputting information includes providing information concerning the vehicle's emissions to at least one entity; wherein the at least one entity comprises a governmental or nongovernmental organization or a user, and

wherein analyzing the received data includes:

- (i) determining if one or more DTCs are present among the received data;
- (ii) determining the status of the MIL; and
- (iii) determining a status of the at least one I/M readiness flag.

*102*  
**56.** A programmed apparatus, programmed to execute a method of remotely testing emissions of a vehicle, comprising:

- (a) wirelessly receiving, by a computer system and from a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) analyzing the received data to determine a status of the vehicle's emissions;
- (c) repeating the wirelessly receiving and analyzing while the vehicle is in use; and
- (d) outputting information indicative of the determined status of the vehicle's emissions.

<sup>103</sup>  
57. The programmed apparatus of claim <sup>102</sup> ~~56~~, wherein the repeating includes determining whether the vehicle's emissions are compliant with at least one predetermined emissions criterion.

<sup>104</sup>  
58. The programmed apparatus of claim <sup>102</sup> ~~56~~, wherein the repeating includes monitoring the data relating to the at least one I/M readiness flag.

<sup>105</sup>  
59. The programmed apparatus of claim <sup>104</sup> ~~58~~, wherein the outputted information indicates a status of the at least one I/M readiness flag.

<sup>106</sup>  
60. The programmed apparatus of claim <sup>102</sup> ~~56~~, wherein the outputted information indicates a description of the at least one DTC.

<sup>107</sup>  
61. The programmed apparatus of claim <sup>102</sup> ~~56~~, wherein the repeating is stopped when a predetermined set of readiness flags are characterized by a complete condition.

<sup>108</sup>  
62. The programmed apparatus of claim <sup>102</sup> ~~56~~, wherein analyzing the received data includes:

- (i) determining if one or more DTCs are present among the received data;
- (ii) determining the status of the MIL; and
- (iii) determining a status of the at least one I/M readiness flag.

*109*  
*63.* The programmed apparatus of claim *62*, wherein analyzing the received data further includes determining whether a user passes or does not pass an emissions test.

*110*  
*64.* The programmed apparatus of claim *63*, wherein the data relating to the at least one I/M readiness flag describes a status of the flag.

*111*  
*65.* The programmed apparatus of claim *64*, wherein analyzing the received data further includes determining if the at least one I/M readiness flag is characterized by at least one of a complete condition, an incomplete condition, a not available condition, and a not supported condition.

*112*  
*66.* The programmed apparatus of claim *56*, wherein the method further comprises storing at least a portion of results from the analyzing in a database.

113 67. <sup>102</sup> The programmed apparatus of claim 56, wherein outputting information includes sending an electronic text, data, or voice message to a computer, cellular telephone, or wireless device.

114 68. <sup>102</sup> The programmed apparatus of claim 56, wherein outputting information includes displaying information on at least one webpage.

115 69. <sup>102</sup> The programmed apparatus of claim 56, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle.

116 70. <sup>102</sup> The programmed apparatus of claim 56, wherein the method further comprises wirelessly receiving GPS data from the vehicle.

117. A programmed apparatus, programmed to execute a method of remotely testing a vehicle's emissions, comprising:

- (a) generating, in a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) transferring the data to a wireless appliance comprising,

- (i) a microprocessor, and
- (ii) a wireless transmitter interfaced with the microprocessor;
- (c) wirelessly transmitting the data with the wireless transmitter; and
- (d) repeating the generating, transferring, and transmitting while the vehicle is in use,

wherein the generating further includes generating a status of at least one of the following I/M readiness tests: (i) misfire monitoring; (ii) fuel systems monitoring; (iii) comprehensive component monitoring; (iv) catalyst monitoring; (v) evaporative system monitoring; (vi) oxygen sensor monitoring; (vii) oxygen sensor heater monitoring; and (viii) exhaust gas recirculator system monitoring,

wherein the generating further includes generating a status of each of tests (i) through (viii) that are supported by the vehicle,

wherein the generating further includes monitoring an engine computer in the vehicle to generate the data comprising at least one of (i) at least one vehicle DTC, (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag, and

wherein the data is transferred to the wireless appliance until the wireless appliance receives at least one instruction to stop the transferring.

*11872.* A programmed apparatus, programmed to execute a method of remotely testing a vehicle's emissions, comprising:

- (a) generating, in a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC); (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) transferring the data to a wireless appliance comprising,
  - (i) a microprocessor, and
  - (ii) a wireless transmitter interfaced with the microprocessor;
- (c) wirelessly transmitting the data with the wireless transmitter; and
- (d) repeating the generating, transferring, and transmitting while the vehicle is in use.

119 73. The programmed apparatus of claim 72, wherein the generating further includes generating a status of at least one of the following I/M readiness tests: (i) misfire monitoring; (ii) fuel systems monitoring; (iii) comprehensive component monitoring; (iv) catalyst monitoring; (v) evaporative system monitoring; (vi) oxygen sensor monitoring; (vii) oxygen sensor heater monitoring; and (viii) exhaust gas recirculator system monitoring.

120 74. The programmed apparatus of claim 72, wherein the generating further includes monitoring an engine computer in the vehicle to generate the data comprising at least one of (i) at least one vehicle DTC, (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag.

121 76. The programmed apparatus of claim 74, wherein the monitoring ceases when the data relating to the I/M readiness flags indicates that no more than two flags supported in the vehicle are characterized by an incomplete condition.

122 76. The programmed apparatus of claim 75, wherein the monitoring ceases when the data relating to the I/M readiness flags indicates that each flag supported in the vehicle is characterized by a complete condition.

123 71. The programmed apparatus of claim 72, wherein the transferring further includes serially transferring the generated data through an OBD-II connector in the vehicle to the wireless appliance.

124 78. The programmed apparatus of claim 72, wherein the data is transferred to the wireless appliance until the wireless appliance receives at least one instruction to stop the transferring.

125 79. The programmed apparatus of claim 72, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle.

*126* 118  
80. The programmed apparatus of claim *72*, wherein at least one of the generating and transmitting is performed at a configurable, predetermined, or random interval.

*127* 81. A machine-readable medium encoded with a plurality of processor-executable instructions for:

- (a) wirelessly receiving, by a computer system and from a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) analyzing the received data to determine a status of the vehicle's emissions;
- (c) repeating the wirelessly receiving and analyzing while the vehicle is in use; and
- (d) outputting information indicative of the determined status of the vehicle's emissions.

*128* 127  
82. The machine-readable medium of claim *81*, wherein the repeating includes determining whether the vehicle's emissions are compliant with at least one predetermined emissions criterion.

*129* 127  
83. The machine-readable medium of claim *81*, wherein analyzing the received data includes:

- (i) determining if one or more DTCs are present among the received data;
- (ii) determining the status of the MIL; and
- (iii) determining a status of the at least one I/M readiness flag.

*130*  
*84.* The machine-readable medium of claim *81*, wherein outputting information *127* includes sending an electronic text, data, or voice message to a computer, cellular telephone, or wireless device.

*131*  
*85.* The machine-readable medium of claim *81*, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle. *127*

*132*  
*86.* A machine-readable medium encoded with a plurality of processor-executable instructions for:

- (a) generating, in a vehicle, data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag;
- (b) transferring the data to a wireless appliance comprising:
  - (i) a microprocessor, and

- (ii) a wireless transmitter interfaced with the microprocessor;
- (c) wirelessly transmitting the data with the wireless transmitter; and
- (d) repeating the generating, transferring, and transmitting while the vehicle is in use.

*133* *86.* The machine-readable medium of claim *86*, wherein the generating further includes generating a status of at least one of the following I/M readiness tests: (i) misfire monitoring; (ii) fuel systems monitoring; (iii) comprehensive component monitoring; (iv) catalyst monitoring; (v) evaporative system monitoring; (vi) oxygen sensor monitoring; (vii) oxygen sensor heater monitoring; and (viii) exhaust gas recirculator system monitoring.

*134* *86.* The machine-readable medium of claim *86*, wherein the generating further includes monitoring an engine computer in the vehicle to generate the data comprising at least one of (i) at least one vehicle diagnostic trouble code (DTC), (ii) status of a MIL, and (iii) data relating to at least one I/M readiness flag.

*135* *86.* The machine-readable medium of claim *86*, wherein the vehicle is selected from a group comprising an automobile, truck, wheeled commercial equipment, heavy truck, power sport vehicle, collision repair vehicle, marine vehicle, and recreational vehicle.

136 90. <sup>132</sup> The machine-readable medium of claim 86, wherein at least one of the generating and transmitting is performed at a configurable, predetermined, or random interval.

137 91. A graphical user interface for displaying information associated with a remote emissions test of a vehicle, comprising:

a viewing device displaying a graphical user interface including,

(a) parameter information associated with a plurality of parameters monitored by the remote emissions test; and

(b) status information reflecting at least one status of the remote emissions test.

138 92. <sup>137</sup> The graphical user interface of claim 91, wherein the parameter information further includes at least one time/date stamp associated with one among the plurality of monitored parameters.

139 93. <sup>137</sup> The graphical user interface of claim 91, wherein the parameters include I/M readiness test parameters.

140 94. <sup>137</sup> The graphical user interface of claim 91, wherein the at least one status includes a pass, no pass, or hold status.

141 95. <sup>137</sup> The graphical user interface of claim 91, wherein the displayed graphical user interface includes a web browser.

142 96. <sup>137</sup> The graphical user interface of claim 91, wherein the displayed graphical user interface is formatted using at least one wireless access protocol (WAP).

143 97. <sup>137</sup> The graphical user interface of claim 91, wherein the viewing device is one of a cellular telephone, a personal digital assistant (PDA), and a computer.

144 98. A method of remotely monitoring a vehicle's emissions, comprising:  
(a) monitoring, with an in-vehicle device, data from the vehicle's engine computer that relates to the vehicle's emissions;  
(b) preparing the data, with a microprocessor of the in-vehicle device, in a format suitable for transmission;  
(c) wirelessly transmitting the data from the in-vehicle device to a central computer system; and  
(d) processing the data, with the central computer system or a computer in communication with the central computer system, to characterize the vehicle's emissions status.